

SEQ ID: 2 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 2 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of the 5' untranslated region and Exon 1 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 1;

to obtain an amplified sample,

- (d) determining the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample;
- (e) comparing the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample with a predetermined threshold level for *DPD* expression;
- (f) determining a 5-Fluorouracil-based chemotherapeutic regimen for said patient based on the difference in amount of *DPD* mRNA in the amplified sample and the threshold level for *DPD* gene expression.

23. (Twice Amended) A method for determining a 5-Fluorouracil-based chemotherapeutic regimen for treating a tumor in a patient comprising:

- (a) obtaining a tumor sample from the tumor;
- (b) isolating mRNA from a tumor sample;
- (c) subjecting the mRNA to amplification using a pair of oligonucleotide primers SEQ ID: 7 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 7 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of Exon 6 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 8, and SEQ ID: 8 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 8 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of Exon 6 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 7; to obtain an amplified sample;
- (d) determining the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample;
- (e) comparing the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample with a predetermined threshold level for *DPD* expression;
- (f) determining a 5-Fluorouracil-based chemotherapeutic regimen for said patient based on the difference in amount of *DPD* mRNA in the amplified sample and the threshold level for *DPD* gene expression.

Please add the following new claims.

27. (New claim) A method for determining a 5-Fluorouracil-based chemotherapeutic regimen

for treating a tumor in patient comprising:

- (a) obtaining a tumor sample from the patient, wherein said tumor sample is fixed;
- (b) isolating mRNA from said tumor sample, wherein said tumor sample is heated to a temperature in the range of about 50 to about 100°C;
- (c) subjecting the mRNA to amplification using a pair of oligonucleotide primers SEQ ID: 1, or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 1 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of the 5' untranslated region and Exon 1 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 2, and SEQ ID: 2 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 2 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of the 5' untranslated region and Exon 1 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 1; to obtain an amplified sample,
- (d) determining the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample;
- (e) comparing the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample with a predetermined threshold level for *DPD* expression;
- (f) determining a 5-Fluorouracil-based chemotherapeutic regimen for said patient based on the difference in amount of *DPD* mRNA in the amplified sample and the threshold level for *DPD* gene expression.

28. (New claim) The method of claim 27, wherein said predetermined threshold level of *DPD* gene expression is about 2.0 to about 2.5 times that of an internal control gene expression level.

29. (New claim) The method of claim 27 or 28, wherein said internal control gene is β -actin.

30. (New claim) The method of claim 27, wherein the tumor sample is fixed and embedded after being obtained.

31. (New claim) The method of claim 27, wherein the heating is isolated in the presence of an effective amount of chaotropic agent.